

What is claimed is:

1. A holographic stereogram exposure apparatus for exposing 3-D image information to a hologram recording medium, comprising:

an object beam optical system which superposes and projects light beams passing through a plurality of images separately displayed in a parallax direction and then condenses these beams to project images on said hologram recording medium corresponding to the number of separations.

2. The holographic stereogram exposure apparatus according to claim 1 having a reference beam optical system which projects a reference beam onto said hologram recording medium for interference with said image projected on said hologram recording medium.

3. The holographic stereogram exposure apparatus according to claim 1, wherein said object beam optical system comprises spatial light modulation means for separately displaying a plurality of images in said parallax direction, a superposed projection optical system for superposing and projecting beams passing through this spatial light modulation means, and a beam-condensing projection optical system for converging a projected image from this superposed projection optical system onto a face of said hologram recording medium.

4. The holographic stereogram exposure apparatus according to claim 3, wherein said object beam optical system divides said spatial light modulation means in a parallax direction so that said holographic stereogram has a parallax only in a horizontal direction.

5. The holographic stereogram exposure apparatus according to claim 3, wherein said object beam optical system vertically and horizontally divides said spatial light modulation means so that said holographic stereogram has parallaxes in vertical and horizontal directions.

6. The holographic stereogram exposure apparatus according to claim 3, wherein said superposed projection optical system in said object beam optical system superposes and projects parts of an image separately displayed by said spatial light modulation means in a parallax direction and projects this image as is in a non-parallax direction for using an image separately displayed on said spatial light modulation means as an aerial image.

7. The holographic stereogram exposure apparatus according to claim 6, wherein said beam-condensing projection optical system of said object beam optical system projects an image projected by said superposed projection optical system onto said hologram recording medium in a non-parallax direction and converges this image in a parallax direction.

8. The holographic stereogram exposure apparatus according to claim 7, wherein said beam-condensing projection optical system of said object beam optical system uses a first-group lens and a second-group lens to allow an image projected by said superposed projection optical system to enter a beam-condensing cylindrical lens.

9. The holographic stereogram exposure apparatus according to claim 8, wherein said beam-condensing projection optical system of said object beam optical system is provided with a correction lens between said first-group lens and said second-group lens

for correcting unevenness of the angle of field for each element hologram on said hologram recording medium.

10. A holographic stereogram exposure method of exposing 3-D image information onto a hologram recording medium, comprising:

an object beam projection step for superposing and projecting light beams passing through a plurality of images separately displayed in a parallax direction and then condensing these beams to project images on said hologram recording medium corresponding to the number of separations; and

a reference beam projection step for projecting a reference beam onto said hologram recording medium for interference with said object beam projected on said hologram recording medium by means of said object beam projection step.

11. The holographic stereogram exposure method according to claim 10, wherein said object beam projection step separately displays a plurality of images in said parallax direction, superposes and projects light beams passing through this separately displayed image, converges the projected image on said hologram recording medium surface in a parallax direction, and forms the projected image in a non-parallax direction.

12. A holographic stereogram generation system for recording 3-D image information on a hologram recording medium and generating a holographic stereogram, comprising:

an image generation system for generating a plurality of images in a parallax direction;

an object beam optical system for separately displaying a plurality of images generated by said image generation system in a parallax direction, superposing,

projecting, and converging beams passing through the plurality of separately displayed images, and projecting images corresponding to the number of separations on said hologram recording medium; and

a reference beam optical system for projecting a reference beam on said hologram recording medium for interference with said image projected on said hologram recording medium by said object beam optical system.